

# Angelo Failla - UNIX Operations Engineer

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This curriculum is made using L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, source files are free downloadable from my personal website.

## OVERVIEW

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I'm an italian Unix System Administrator currently located in Dublin, (Ireland).

I have got 9 years experience in managing and writing software for GNU/Linux and other UNIX-like operating systems. I've started using those systems in 2000, the same year in which I've started my university career. I feel those environments like my natural working habitat.

My non-working time is often spent collaborating actively with two open-source organizations called Freaknet.org and Dyne.org. I consider myself a "free software evangelist" for my contributions to those organizations. During these years I've helped out projects like MuSE (<http://muse.dyne.org>), TBT (<http://tbt.dyne.org>), the Dyne:bolic Linux distro.

My professional career commenced during my university years in which I've started working for 2 years as a developer for a department of my faculty. I've then moved to a small Web Agency where I worked as LAMP developer and occasionally as a system administrator.

In 2004 I moved away from development to enter the system administration world. I believe it's very important for both developers and system administrators to get experience on the opposite fields. I think all software developers need to spend time working on systems administration so they can understand software from 'both ends'.

In 2004 I moved to a local ISP working as UNIX sysadmin. I was responsible for maintaining systems (DNS, Mail Server, Web Server, network equipments, etc) and for internal/external support.

In 2005 I moved to a consultant company with offices based in Catania, Rome and Milan, working on projects together with companies like Nokia Italy, Vodafone Italy, ATAC Roma, etc. In that period i've also joined a project in which i've got the opportunity to enjoy some Linux kernel space programming. My main job was to write some Linux kernel modules that were used to capture interrupts coming from switches and other buttons present on an embedded device, and to pass those interrupts to the relative user space programs, i've also wrote a kernel module to blink the leds differently to signal different statuses of the system.

In early 2008 I've moved to Dublin, Ireland, looking for more exciting experiences, I've joined NewBay Software Ltd firstly as an UNIX Operations Engineer then moving to the Professional Services team, specifically in the Deployment Team, here i work mainly in developing and improving of our deployment automation tools written in Perl, but also working on performance testing, design, capacity planning, java/operating system troubleshooting, etc.

Recently I wrote a tool called "img-proxy" which consists in a http proxy and image thumbnailer. This is used by other company's applications. The tool is written in mod\_perl making use of apache2, mod\_disk\_cache and ImageMagick to achieve his duties.

Last project i've worked (and still working) on is an AT&T Project called "Mobileshare": <http://att.com/mobileshare/> I've joined the them who built the whole infrastructure based on Dell blade centres, Xen virtualization, Netapp iSCSI/NFS storage, F5 BigIP load balancers, Cisco equipments and Java based applications.

## SKILL DETAILS

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### OPERATING SYSTEMS

- **GNU/Linux:** mainly RedHat & Debian based distros.
- **Solaris 10 (x86/SPARC):** IPMP, software raid mirroring, zones/containers, ZFS filesystem, hardening with JASS, packages creation.

- **\*BSD**: I've used OpenBSD/FreeBSD to set VPNs, firewalls, gateways, antis spam servers.
- other UNIX closed OS's: **HP-UX, AIX, etc...**: occasionally I've worked with other UNIX OS'es like HP-UX, AIX.
- **CISCO IOS**: although I've never worked as Network Engineer I've good understanding of networking and I can deal with Cisco switches configuration.

## PROGRAMMING LANGUAGES, LIBRARIES AND FRAMEWORK

- **Languages**: Past experience with C/C++ in UNIX environment (able to write networking softwares and some kernel-space programming for Linux).
- **HighLevel/Interpreted**: Perl, PHP. I've more and more abandoned PHP to concentrage more on Perl.
- **Scripting Languages**: Shell script programming (bash, ksh, zsh).
- **Markup Languages**: HTML 4.01, XHTML, CSS 2.0, L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>, DocBook/SGML.
- **Database**: excellent knowledge of SQL on MySQL and PostgreSQL, rudiments of Oracle.

## SOFTWARE DEVELOPMENT TECHNIQUES

- Version control and branching best practices using Subversion, CVS, Git.
- Distributed build and test automation using make, autoconf, ExtUtils::MakeMaker, Test::More and Test::MockObject.
- Advanced usage of VIM as IDE for developing.
- CPAN.org author: I've written and published a Perl module called Finance::Bank::IE::PermanentTSB (<http://search.cpan.org/~pallotron/Finance-Bank-IE-PermanentTSB>). This module is based on WWW::Mechanize and HTML::TokeParser and exposes an interface to the Permanent TSB homebanking site that allows the developer/user to check the account balance and get account statement (with possibility to save it as CSV file and print graphs using GnuPlot). A CLI utility tool is also provided.

## SYSTEM ADMINISTRATION BEST PRACTICES AND INFRASTRUCTURE

- **Web and Application Servers**: Apache (mod-rewrite, mod-proxy, etc.), Tomcat, JBoss
- **OpenSSH**: strong working knowledge of Tunneling, Sock5 proxying, X11 Forwarding, Reverse proxying;
- **Mail Server**: I used to run Qmail for years but I've recently moved to Postfix + Courier IMAP. I've strong working knowledge of SMTP and other protocols like IMAP(S) and POP3(S), anti-spam technics like grey-listing, rbl filters, LDAP authentication and mailing list management with mailman.
- **DNS**: strong working experience in setting up DNS infrastructure using mainly Bind9. Advanced DNS configurations
- **NAS/SAN**: experience mainly with Netapp appliances using iSCSI/FibreChannel/NFS technology.
- **Versioning server**: setting up and hardening of Git, Subversion, CVS.
- **Firewalling**: strong knowledge of Linux Iptables and QoS, OpenBSD packet filtering system: pfsync, carp, sasync, ifstated, OpenVPN.
- **Monitoring**: working experience in using Nagios, Cacti, MRTG, RRDTool, SNMPD. Ability to write and configure Nagios scripts, extend SNMP daemon to launch shell scripts, etc.
- **HA and LoadBalancing**: working experience in using HA solutions like BigIP F5, HeartBeat, DRBD
- **Backup practices**: implemented distributed tape-based backup infrastructure based on Bacula/Amanda
- **Security**: security and hardening using Tripwire, Grsecurity, Nessus and JASS.
- **VoIP**: implemented software PBX based on Asterisk and Digium cards. Good knowledge of SIP/RTP, voicemail, VCR, Asterisk dialplan and AGI extensions programming.
- **Debugging**: working debugging best practices using strace, ddd, gdb, ethereal/wireshark, nmap, hping, dsniff, ettercap.
- **PKI Infrastructures**: GnuPG, OpenSSL (able to run and set up a Certification Authority);
- **SwiftMQ JMS High Availability for Java**
- IP networks: design and implementation, routing, DNS, firewalls, VPNs, physical layout, cabling.
- **OpenLDAP** (with PAM configuration for UNIX);
- experience of targeting code and operating system towards a big variety of platforms, from distributed multi-tier network environments built via fast and high-memory servers, down to slow, low ram flash based embedded systems.

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## WORKING EXPERIENCES

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- **(February 2008 - Present) UNIX Operations Engineer at NewBay Software Ltd.** (<http://www.newbay.com>)

Responsible for a wide range of activities like automation of software and virtual machines deployment, integration with load balancers and storage, performance testing, java troubleshooting, capacity planning, design. Exposed to technologies like:

- Solaris 10 (Zones/Containers/ZFS/IPMP) and/or Red Hat GNU/Linux
- Xen virtualization
- Netapp iSCSI and NFS storage
- Java/Tomcat
- SwiftMQ HA
- Nagios and Cacti
- MySQL and Oracle RAC
- BigIP F5 LTM/GTM
- Cisco switches

Recent project i've worked on:

- AT&T Mobileshare: <http://att.com/mobileshare/>
- T-mobile US Myfaves
- T-mobile Germany/Austria/UK Myfaves
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- **(July 2005 - January 2008) Linux Embedded Engineer at New COM SRL** (<http://www.newcomnp.it>).

- **Linux Embedded Engineer:** I created and actually I maintain an embedded operating system based on Gentoo Linux, used on embedded computers (pc104 with vortex86 cpu). This system has the following characteristics:
  - \* all the system compiled from scratch;
  - \* system compiled over uClibc library, much smaller than glibc. (a version compiled over glibc is available as well);
  - \* Xorg server, touchscreen, virtual on screen keyboard;
  - \* optimized disk space : about 70 mb (with all the components);
  - \* read only root filesystem;
  - \* busybox that combines tiny versions of many common UNIX utilities into a single small executable;
  - \* serial port for management;
  - \* sshd and vnc servers;

This system was used for example to control PLCs attached to industrial machines.

- **UNIX Software Engineer:** I wrote a C/unixODBC daemon that reads e processes informations coming from a PLC through rs232 serial port. This daemon send alarms and writes data to a Microsoft SQL Server using the unixODBC libraries. The project is called plcfetch, the source is available at: <http://cvs.hinezumilabs.org/viewcvs/plcfetch/>

- **(September 2005 - January 2008) UNIX System/Network Administrator and IT Consultant at Movia SpA (former SPMC srl)** (<http://www.movia.biz>).

I was responsible of keeping up and running the whole company's network infrastructure located in 3 different cities: Catania, Rome and Milan.

- **On June 2007 I wrote, in C language, a Linux Kernel Module** for an embedded system based on a Toradex Colibri board (CPU Intel ARM XScale PXA270). This module controls some status leds and receive the interrupt generated when the user presses some command switches, sending commands to an userspace program wrote in C. The source is available at: [http://www.angelofailla.com/software/colibri-toradex-gpio\\_linux2.4.tar.gz](http://www.angelofailla.com/software/colibri-toradex-gpio_linux2.4.tar.gz)
- **On June 2006 I was involved in Teleca Solutions Italia SpA** as a consultant into a FastWeb SpA project called "Accesso limitato ai CPE da parte dei Clienti". I wrote a lot of Perl scripting procedures to sync Oracle database to MySQL databases used as back-end by RADIUS authentication servers.
- **On January 2006 I was involed into a LogicaCMG** (<http://www.logicacmq.com>) **team in Vodafone Italia (Milan)**. I have customized a lot of korn shell backup scripting procedure on Compaq Tru64 UNIX V5.1B, Alpha architecture.
- **I was involved into Vodafone's PoC Web Gui project (from September 2005 to January 2006)**. PoCWebGui is a JSP Web GUI linked into the Vodafone's [www.190.it](http://www.190.it) portal, the GUI act as a front-end management tool for the Pust To Talk service. I have had duties related to system administration support, installation and configuration tasks on Solaris 9 operating system, CVS module administration, shell scripting programming, installation and configuration documentation writing.

- **(2001 - Present) Staff member at Freaknet.org and Dyne.org open-source communities.**

I'm responsible of keeping up and running our network infrastructure; I used to give speeches about open source software. I was also gave lessons as teacher in our free software course (have a look in the section below on this cv). I gave my contribute into this free software projects:

- **MuSE: Multiple Streaming Engine** (<http://muse.dyne.org>): I wrote the decoder channel for wav audio files (C++ in UNIX environment);
- **TBT: Time Based Text:** (<http://tbt.dyne.org>) I wrote some lines into the main program (C/C++ UNIX environment), a PHP Class used to read files in .tbt format, a web-application, commissioned by Impakt.nl (wrote in PHP / Javascript / Ajax and available at <http://tbt.dyne.org/impakt/>), it is used to public .tbt files on internet.
- **(December 2004 - September 2005) UNIX system administrator at ComputerLine SRL** (<http://www.computerline.it>)  
I kept running internet services (DNS, Email, WEB, FTP, RDBMS, etc), I did troubleshooting and technical support, and issues regarding TLD domains registration.
- **(March 2004 - December 2004) LAMP developer at Uzed@ Web Agency** (<http://www.uzeda.com>)
- **(2001 - 2002) Developer at “Dipartimento di Informatica e Telecomunicazioni della Università degli Studi di Catania”** (<http://www.diit.unict.it/>).
- **(2000 - 2001) Developer at Infozoo Project & Co.**

## LANGUAGES

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My natural tongue is Italian, but I'm fluent in English.

## OTHER EXPERIENCES

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### CONFERENCES, WORKSHOPS, SPEECHES

These are some workshops, speeches, conferences I did as a speaker:

- **19 November 2004 - Spam: è ora di difendersi! - Implementazione di servizi anti-spam in Qmail** - at Smau Sicilia 2004 (Le Ciminiere - Catania) <http://www.smausicilia.it> - A speech regarding spam fighting, with an example configuration of Qmail with spamassassin;
- **8 May 2004 - FaxMachine: tecniche a supporto del direct marketing** - at Webb.it 2004 (Padova) <http://www.webb.it> - A workshop regarding a fax server software called Hylafax. The workshop treated the installation on a unix server with fax2email and email2fax capabilities;
- **6 May 2004 - LDAP per Autenticazione Samba/PAM** - at Webb.it 2004 (Padova) <http://www.webb.it> - Workshop regarding using OpenLDAP as an authentication backend for samba NT/AD domains using unix machines.
- **16 February 2004 - Workshop Linux Kernel [Ma—Hac]king** - at Centro Culturale Zo' (v.le Africa - Catania) where I did a practical workshop regarding how to compile the Linux 2.6 Kernel. I did this speech also at the italian hackermeeting in 2004. (<http://www.hackmeeting.org>);
- **23 November 2002 - LinuxDay 2002** - “Aula Magna del Dipartimento di Matematica e Informatica dell'Università di Catania” a speech regarding the use of free software inside public schools.

## COURSES

Courses I did as a teacher:

- **On 2006 I did a UNIX base course inside my company**
- **On 2003/2004 course code PON 1-3-2003-577 “Protocolli di rete e servizi UNIX”:** a course for high school teachers at “Liceo Scientifico Majorana S.G. La Punta (in Catania)”;
- **On 2003 course code PON 1-3-2003-561 “Introduzione allo UNIX nella scuola”:** a course for high school teachers at “Liceo Scientifico Majorana S.G. La Punta (in Catania)”;
- **On 2003 Course for UNIX sysadmins at FreakNet MediaLab Catania** (<http://www.freaknet.org>);
- **On 2002 UNIX base course at FreakNet MediaLab Catania** (<http://www.freaknet.org>);

## PUBLICATIONS

Articles on newspapers and magazines:

- **DEV - no. 168 April 2005:** *Compilare il kernel Linux: una guida pratica*: i wrote an article regarding howto compile the Linux kernel. DEV is an italian magazine.

## PROJECTS I'M INVOLVED IN:

- **Freaknet ( <http://www.freaknet.org> ):** the oldest italian hacklab. Born in 1998 as a location for our "FREAKNET BBS" Network, active since the end of 1994, it is a free open lab, where people can work with computers and connect to the internet for free. The basic idea was to offer computers and network for people that CAN'T have one: students, viados, immigrants, travellers, etc. Free and Open Source software used. Most of the computers are recovered from trash or were donated. Many services offered.
- **Dyne.org ( <http://dyne.org> ):** Since 2000 the dyne.org foundation is a free software foundry for digital artisans. Dyne produce open source tools and ideas for media arts, sharing a grassroot access to technology, education and freedom of creation.

## HOBBIES

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- **Computer Science and free software:** I use to write and mantain systems for hobbies too, I have got an home network with a lot of servers used to learn new technologies. Often I use the world wide web and its infrastructure to learn as much as I can, I'm always looking for free text, articles, books, whitepapers to keep my skills always updated.
- **Photography:** I like to travel with my camera to take wonderfull picture. My preferred genere is landscape but I like to take pictures of animals and people as well. I'm recently getting interest in discovery the old good film photography, i've set up a dark room at home where i mainly develop black and white film. I own the following cameras:
  - Canon 5D mk1 with a set of canon lenses.
  - Yashica MAT 124g, medium format film camera
  - Holga 120N, medium format film camera
  - Vivitar V2000, 35mm format film camera
  - Fujifilm Instax100, polaroid-like camera

I've a flickr account on: <http://www.flickr.com/photos/pallotron/>.

- **Rugby:** I've been playing since I was 12 years old starting with Amatori Rugby Catania (<http://www.amatorirugbycatania.com>). I played on the italian first division 21 championship (98/99, 99/2000), reaching the playoff. I played for the Senior team taking Amatori Catania from third to second division, and then from Second division to the first division (Top Ten). I then moved to S. Gregorio Rugby (<http://www.sangregoriocataniarugby.com>) on third division. I've reached the "Serie A" (second division) in season 2007/08, before moving to Ireland.

## EDUCATION

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- From 1999 to 2005 at "Università degli Studi di Catania, Engineering Faculty - Computer Science".
- From 1994 to 1999 I.T.I.S. "G. Marconi" High School (Catania) - Computer Science

Although I studied Computer Science at school and university I built my own knowledge as an autodidact.